

**REMARKS:**

**In respect to the Claim Rejections - 35 U.S.C. 103:**

The claim 1 is amended to combine claim 6 into claim 1 as follows:

1. (Currently amended) A variable engine valve control system with pressure difference comprising a hydraulic supply equipment, a hydraulic actuator apparatus , a valve and a spring for controlling piston balance; said hydraulic actuator includes a hydraulic cylinder , a piston and a piston rod ; said piston rod is coupled and moved with said valve ; wherein said piston divides said hydraulic cylinder into a upper chamber and a lower chamber; said hydraulic supply equipment is connected with said upper chamber of said hydraulic cylinder through a general fluid inlet pipe, and said lower chamber of the said hydraulic cylinder is connected with said hydraulic supply equipment through a pressure difference proportional relief valve; a hydraulically-controlled check valve connected with said pressure difference proportional relief valve in parallel is situated between the upper chamber of said hydraulic cylinder and the lower chamber of said hydraulic cylinder, thereby hydraulic fluid can enter into the lower chamber of said hydraulic cylinder from the upper chamber of said hydraulic cylinder directly.

Neither Schechter et al. (5,275,136) nor Ling et al. (CN 1337539A) teach the hydraulically-controlled check valve in the variable engine valve control system.

The hydraulically-controlled check valve largely improves the function of the control system. It make the system's responding speed fast. Therefore, the control reliability of the system is quite improved. (see from the specification page 6 24-26)

Furthermore, also Ling et al. disclose a pressure difference proportional relief valve, but they do not teach the pressure difference proportional relief valve be used for controlling engine valves, and the advantages thereof. Schechter et al. disclose a variable engine valve control system with pressure difference, but they do not teach the control system can be improved by using a pressure difference proportional relief valve. Therefore, using the pressure difference proportional relief valve in the variable engine valve control system, it is a non prima facie case.

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir.1991). See MPEP 2143-2143.03 for decisions pertinent to each of these criteria."

Schechter and Ling do not teach some suggestion or motivation for using the pressure difference proportional relief valve in the variable engine valve control system. They also do not teach the claim limitation of the hydraulically-controlled check valve. **Therefore, the currently amended claim 1 is patentable under 103(a) over Schechter in view of Ling.**

The claim 12 is amended to combine claims 15 into claim 12. **For the same reason the currently amended claim 12 is patentable.**

Dependent claims 2-3 and 9 ultimately depend from the currently amended claim 1 and incorporate the above discussed patentable features of the currently amended claim 1. Thus, the currently amended claims 2-3 and 9 are also patentable over the cited prior art references.

The claim 16 depends the currently amended claim 12. For the same reason the claim 16 is patentable.

Claims 4-8, 10, 11, 13-15, 17-20 are objected to as being dependent upon a rejected base claim. Now the independent claims 1 and 12 are rewritten as patentable. Therefore, they are patentable.

Dependent claims 6 and 15 are canceled.

For all of the above reasons, applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore, applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Tianhua Gu', with a stylized flourish at the end.

Tianhua Gu

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